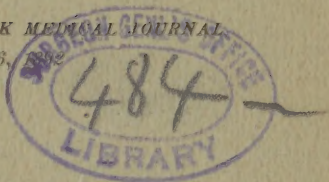


GOULEY (J. W. S.)

A PLEA FOR
THE EARLY EXTIRPATION
OF TUMORS

BY
✓
JOHN W. S. GOULEY, M.D.
SURGEON TO BELLEVUE HOSPITAL.

REPRINTED FROM THE NEW YORK MEDICAL JOURNAL
FOR NOVEMBER 26, 1892



NEW YORK
D. APPLETON AND COMPANY
1892

A PLEA FOR
THE EARLY EXTIRPATION
OF TUMORS

BY
JOHN W. S. GOULEY, M.D.
SURGEON TO BELLEVUE HOSPITAL.

REPRINTED FROM THE NEW YORK MEDICAL JOURNAL
FOR NOVEMBER 26, 1892



NEW YORK
D. APPLETON AND COMPANY

1892

COPYRIGHT, 1892,
BY D. APPLETON AND COMPANY.

A PLEA FOR THE EARLY EXTIRPATION OF TUMORS.*

AT what period of the development of a tumor is its extirpation justifiable? The answers to this question for a long time have been divided between early and late surgical intervention and non-intervention. Some surgeons, at home and abroad, have favored and do now favor early extirpation even in the case of benign tumors, but many advise non-interference so long as tumors are small, painless, stationary, or of slow growth.

The observations of experienced clinicians indicate that malignant tumors sometimes have a long period of latency, and that they often begin as benign tumors, which are stationary for years or grow very slowly, and then increase with the greatest rapidity. Such seems to be the progress of some of the mammary tumors, notably certain adenomata, which occasionally lead astray the medical adviser respecting prognosis, for, the diagnosis having been made and the tumor growing slowly, its removal is condemned, or deferred until perhaps the disease has already become malignant. The recent advances in pathology and in surgical

* Read before the New York State Medical Association, November 16, 1892.

procedures are very likely to induce the majority of surgeons to modify their views in relation to the indication for operative intervention.

If it were generally known among intelligent people that many innocent tumors sooner or later become malignant, and that malignant tumors often simulate benign tumors and remain quiescent for a great while, the sufferers would unhesitatingly consent to the removal of these morbid growths in their inception, long before the possible advent of serious mischiefs, or when the cure might be effected by minor operations which would leave the smallest scars, especially in such parts as the face, neck, arms, or hands.

In the discussion of the initial question the following points will be considered: (1) The relative frequency of malignant and benign tumors, (2) the liability of the transformation of benign into malignant tumors, (3) the impropriety of delaying operative interference, and (4) the advantages of early operations.

1. The testimony of careful observers tends to show that the malignant exceed the benign tumors in frequency, and also that many malignant tumors remain stationary and seemingly harmless for one, two, six, eight years, or even for longer periods, then increase rapidly, and soon contaminate the system. Several modern writers have analyzed tumors on a sufficiently large scale to give some notion of the relative frequency of malignant and benign tumors. Mr. W. R. Williams's analysis of 11,100 cases of tumors shows fifty-three per cent. to be cancerous, and of these, twenty-four per cent. to be cancers of the breast. Dr. S. W. Gross cited 649 cases of mammary tumors. Of these 649 tumors, 587 were malignant and only 62 were benign. Of the 587 malignant tumors, 530 were carcinomata and 57 were sarcomata. Of the 62 benign tumors, 48 were in-

omata, 2 were adenomata, and 12 were cystomata. This excess of malignant over benign tumors noted by Dr. Gross corresponds with the observations of nearly all pathologists; but the proportion of adenomata stated by him is very small as compared with the experiences of other observers, although he afterward spoke of 5 adenomata examined by himself and of 13 examples which he had collated, making 18 additional cases. Among Mr. Williams's 11,100 tumors are 280 cases of breast adenoma to 68 cases of breast sarcoma and 1,439 cases of breast carcinoma—in all, 1,781 cases, with about sixteen per cent. of adenomata; while among Dr. Gross's cases there are 587 malignant tumors and 20 adenomata, making in all 607, with only about three per cent. of adenomata.

Sir Astley Cooper, who first described adenomata of the breast under the name of "chronic mammary tumors," regarded this disease as common, and reported a series of illustrative cases in his work on the breast. These were cases of circumscribed adenomata "upon rather than in the breast," the diffuse adenomata being those which are viewed as so rare by Broca and other writers. Is it not possible that this great rarity of diffuse adenomata may be more apparent than real, and that many of the excised carcinomata may at one time have been diffuse adenomata? This question can be definitely settled only when great numbers of breasts shall be excised much earlier than heretofore, or as soon as the first traces of disease can be discerned. If, then, it should be shown that diffuse adenomata are very frequent instead of being very rare, it would be fair to infer that most of the tumors formerly excised as carcinomata had probably begun as diffuse adenomata, and that something like prophylaxis of carcinomata might be effected by the early excision of diffuse adenomata. In such cases the entire breast would necessarily be re-

moved, while in circumscribed adenomata the breast would be saved.

Respecting the age of individuals affected with adenomata as compared with that of cancerous subjects, Broca has compiled a very interesting table of cases reported by Lebert, Velpeau, Bauchet, and Rouyer. This table comprises 152 cases of tumors. Of these 152 cases, 62 were cancers of the breast; 90 were adenomata, and of the 90 adenomata, 70 were of the mammary, 11 of the parotid, and 9 of the palatine glands. Before the age of twenty there were 6 cases of mammary adenoma, 3 cases of parotid adenoma, 3 cases of palatine adenoma, and no case of mammary cancer. From the age of twenty to twenty-five there were 17 cases of mammary adenoma, 1 of parotid, and 1 of palatine adenoma, and no case of mammary cancer. From the age of twenty-six to thirty there were 9 cases of mammary adenoma, 1 of parotid and 1 of palatine adenoma, and 1 case of mammary cancer. From the age of thirty-one to forty there were 20 cases of mammary adenoma, 5 cases of parotid adenoma, 3 cases of palatine adenoma, and 12 cases of mammary cancer. From the age of forty-one to fifty there were 15 cases of mammary adenoma, 1 case of parotid and 1 case of palatine adenoma, and 21 cases of mammary cancer. From the age of fifty-one to fifty-five there were 3 cases of mammary adenoma, none of parotid or of palatine adenoma, and 12 cases of mammary cancer. Beyond the age of fifty-five there were no cases of mammary, parotid, or palatine adenoma, but there were 16 cases of mammary cancer.

Among the interesting features of this table are the following: There are in it no cases of cancer up to the age of twenty-five, 1 case between twenty-six and thirty, and 12 cases between thirty-one and forty, so that up to the age of forty there are only 13 cases of breast cancer to

52 cases of breast adenoma, while from the age of forty-one to fifty-five and upward the high figures are reversed and there are 49 cases of breast cancer to 18 cases of breast adenoma. This is in corroboration of the statement of Sir Astley Cooper and of other observers that circumscribed adenoma of the breast occurs with greatest frequency in early life—*i. e.*, between the ages of fifteen and thirty, while carcinoma is rarely developed before the age of forty.

Mr. Thomas Bryant, in his work on the diseases of the breast, gives the following analysis of one hundred cases of mammary “adenofibroma” observed by him, illustrating the ages at which they occur :

“Twenty-seven cases were first discovered between puberty and the age of twenty—*i. e.*, during the developmental stage of the breast’s life.

“Thirty-five cases appeared between twenty-one and thirty years of age, or during the period of functional perfection.

“Twenty-two cases appeared between thirty-one and forty, during the period of its maturity.

“Thirteen cases appeared during forty-one and fifty, and 3 cases appeared in women over fifty, or during the period of its functional decline.

“Forty-six of these cases occurred in single women, 39 in the married and prolific, 15 in the married and sterile.”

The question of the influence of sex upon tumor formation need not be discussed, as it is unnecessary to the purposes of this plea, but it may be of incidental interest to state the conclusion arrived at by statisticians, which is that of all cancers, sixty and even seventy per cent. occur in females.

Another item worthy of note is the rate of mortality from malignant tumors as compared with other diseases. In the discussion on tumors held during the fifth annual

meeting of the New York State Medical Association, Dr. Alfred L. Carroll, formerly secretary of the New York State Board of Health, answered the question, "What is the rate of mortality from malignant neoplasmata as compared with other diseases?" and based his answer upon an examination of the mortuary statistics of the State of New York for the years 1885, 1886, and 1887, and said: "In these three years the deaths from all causes certified in the State at large amounted to 264,161. Of these, 6,262 were reported as due to 'cancer'—1 in every 42.2, or a little more than two and a third per cent." Dr. Carroll's computation gives a percentage of mortality from cancer only a little lower than that of the late Dr. William Farr, which was based upon the analysis of millions of deaths from all causes.

Aside from the consideration of the relative frequency of malignant and benign tumors, their discrimination, clinically, is often so difficult that surgeons are justified in advising immediate extirpation, and in relying upon the microscope to insure the diagnosis and establish the prognosis.

2. The liability to the transformation of benign into malignant tumors has long been recognized, but the histological demonstration of the phenomenon is modern. It has happened that some tumors have been excised during their transition from the benign to the malignant type and that this metamorphic process has been verified by microscopical examination of different parts of the growths. But so far it has not been possible to determine the precise time of the beginning of the transformation.

The clinical evidence that tumors, retaining the characters of benignity for a number of years, often suddenly acquire those of malignity, does not appear to have been questioned, and many surgeons, such as Broca, Verneuil, Richet, Labbé, Klebs, Billroth, Sir James Paget, Mr. Bryant, Dr. Gross, and others, have made valuable contribu-

tions in the establishment of the law of metamorphosis of tumors. Among the early observations of the transformation of tumors were those of Sir Astley Cooper, who, in commenting upon "chronic mammary tumors," said: "Although these tumors are not in their commencement malignant, and they continue for many years free from the disposition to become so, yet if they remain until the period of the cessation of menstruation they sometimes assume a new and malignant action." While both the diffuse and circumscribed adenomata tend to carcinomatous transformation, those adenomata which contain an excess of fibrous tissue tend to sarcomatous transformation. The existence in the same breast of circumscribed and diffuse adenoma has been verified by Broca. The coexistence too of benign and malignant tumors in the same individual and even in the same organ has frequently been demonstrated and examples thereof have been given by several authors. The writer has observed a sufficient number of breast tumors with long periods of latency to warrant him in thinking that most of these may have been originally adenomata, and that probably many carcinomata begin as diffuse adenomata. Benign circumscribed adenomata of the breast recur after extirpation in a considerable proportion of cases, without, however, causing general infection; but those adenomata that have become malignant are soon followed by general infection, while most of the adenomata of internal organs are malignant from the beginning.

Modern writers on tumors agree that not only circumscribed adenomata, which so often remain stationary for a long time, but most of the other benign tumors are liable to become malignant. Thus warts, moles, and other growths upon the face or body have been observed to undergo cancerous metamorphosis many years after their appearance. The late Dr. A. C. Post cited the case of a

patient who had a mole that underwent carcinomatous transformation forty years after it had been first noticed, and advocated the removal of "morbid growths which seem to be in themselves capable of no harm." Fibrous tumors are often transformed into sarcomata. Primary sarcomata are said to be rare, particularly in the breast, for, in the majority of instances, they are believed to begin as fibrous tumors which, remaining stationary for variable lapses of time, finally undergo sarcomatous transformation. In myxomata and myomata an accession of sarcomatous element is not infrequent, the tumors so metamorphosed being commonly named myxosarcoma in the one case and myosarcoma in the other case. Lipomata are sometimes metamorphosed into myxomata and sometimes into sarcomata. Some years ago the writer extirpated a large lipoma, nearly half of the bulk of which had undergone sarcomatous metamorphosis.

It is well known that when mammary adenomata become malignant such epithelial hyperplasia as may cause carcinoma does not always occur, for it sometimes happens that the regressive metaplasia is in the connective tissue framework of the acini and tubes, sarcoma being the result. This sarcomatous element generally invades the tumor only in part and constitutes a variety and not a new species, as, for instance, the so-called adenosarcoma, the malignant transformation occurring in the fibrous tissue, which is, perhaps, already in excess and not among the epithelia of the acini or of the tubes. So long as a tumor retains a comparatively high degree of organization it remains benign, but when its constituent tissues are disturbed there is apt to be an accession of tissues of a low grade of organization and the tumor becomes malignant; the lower the organization, the greater the malignity.

3. In setting forth the reasons why it is believed to be

improper and unwise to delay operative interference for the cure of tumors, it may be well to include a brief statement of the principal methods of general and local treatment from time to time employed. Many surgeons, ever since the beginning of this century, have tried in vain both the general and local treatment of benign and of malignant tumors.

The general treatment has consisted in the administration of mercurial preparations, of potassium iodide, of purgatives, of hemlock, of red-clover tea, of thuya and hydrastis tinctures, of Chian turpentine, or of alkaline solutions, all to no purpose. There is no trustworthy evidence that a single case has ever been cured by these or by any other drugs. Those who stubbornly rely upon exclusive general treatment in the management of tumors only imperil the lives of their patients, for, thus allured, the sufferers temporize until it is too late.

Local medication leads to no better end, but is still resorted to by many because it has been advocated by some eminent surgeons who scarcely imagined what might be the extent of the mischief indirectly caused by this advocacy, although it was not without qualifications, and although most of them had afterward acknowledged the failure of local treatment by poultices, plasters, unguents, leeches, ice, etc., and had finally advised excision as the most rational mode of cure. Unfortunately, by the majority, the first statement only was read, copied, quoted, and acted upon without discrimination. The qualifications were unheeded, the repudiation was unnoticed, the evil of this essentially temporizing management increased, and the consequences were disastrous. Plasters, unguents, arsenical pastes, nostrums of all kinds, continue to be used, much to the detriment and suffering of the afflicted.

Mechanical compression was for a long time in great

vogue, and is even now occasionally employed in the treatment of tumors and effected by means of adhesive-plaster strips, compressed sponges, tight bandaging, etc. More than seventy years ago its advocates went so far as to devise special instruments to compress breast tumors. Sir Astley Cooper recorded a case of mammary tumor treated by compression—at first, for several months, with adhesive strips, and afterward with a pressure instrument which “was worn during four months without advantage.” The tumor then increased with great rapidity, and in the course of six months was excised, when it had attained a weight of nine pounds. Broca has resorted to compression in some cases of mammary adenomata and reported their diminution, and even believed that some of them had disappeared after a few weeks of compression, but the cases were not afterward observed long enough to decide the question of cure. The effect of compression was supposed to be absorption of the tumors, but there is no proof of such absorption of tumors. Cyst formation is known to be very common in tumors of the breast. Steady compression applied to these tumors sometimes causes a marked diminution of their bulk, and this diminution is generally owing to absorption of the fluid contents of the cysts, while the solid substance of the tumors remains intact. Soon after the cessation of the compressing force the cysts fill again, and then the tumor structure is liable to grow with increased rapidity.

For a century past eminent teachers have promulgated the idea that so long as a tumor is causing no apparent mischief, and shows no disposition to increase in volume, it should not be excised. This precept, regarded by many as conservative, is commonly followed to the letter in the management of new growths, even by some of the recent writers on the subject. Citations might be greatly multiplied, but

brief extracts from two modern teachers will suffice. Dr. S. W. Gross, who advocated without qualification the early excision of breast adenomata, seems to have made an exception in the case of fibrous tumors, and said: "As fibrous tumors are absolutely innocent, if their true nature be determined, they may be let alone; but my advice is that they be extirpated if they begin to grow." It seems strange that the doctor should have sanctioned temporization in this case, as he was known to be a strong believer in the liability of the transformation of fibrous tumors into sarcomata. It is often so difficult, at the bedside, to determine the character of small mammary tumors that the risk of waiting until they begin to increase is such that those countenancing this delay assume an unenviable responsibility, for sudden increase in bulk of solid tumors is not unlikely to be the beginning of carcinomatous or of sarcomatous transformation. Mr. Bryant, in speaking of benign tumors of the breast, says: "It is not, however, necessary to remove every tumor of this kind as soon as it is discovered, for it may grow so slowly, and be so little in the way, as to render its removal a matter of small urgency. . . ." If the law of metamorphosis of tumors, which fixes no particular time for the beginning of the transformation of benign into malignant growths, is valid, the non-intervention implied by Mr. Bryant is scarcely safe. Those who uttered this precept of expectancy, and the others who accepted and followed it, do not appear to have given good reasons why a tumor which is stationary and apparently harmless, but liable to metamorphosis, should not be removed. In accordance with the light thrown of late upon the natural history of tumors, it is proper to inquire if this precept can be regarded as truly conservative.

The well-known fact that any solid benign growth is

liable to become malignant should be sufficient to induce surgeons to condemn the arbitrary expectancy which is so generally counseled and which so surely leads to disaster. Even if a particular tumor increases without showing signs of malignity, there can be no advantage in waiting until it shall have attained a great size, as the larger the tumor the more formidable the operation for its removal. The advice that a morbid growth should not be removed because it is stationary and causes no inconvenience does not seem to be founded on sound principles. Because it does not produce present inconvenience gives no surety that it will not, sooner or later, cause the greatest distress, if only from its increase in size or its interference with a vital function; but the liability to malignant transformation is what is most to be dreaded. Therefore, as a general rule, it may be considered unwise to allow any accessible tumor to so increase in size as to be damaging to the individual or, if it be stationary, to wait until it is metamorphosed before proposing an operation for its cure. The true spirit of conservatism is manifested by advising the removal of a morbid growth when it is benign, when it is small, when it is stationary, when the operation for its eradication is trifling in comparison with what it must be when the tumor has attained a great size, or when the neighboring lymph glands are implicated. The modern improvements in inducing anæsthesia, simplifying surgical procedures, and insuring asepticism of wounds, render operations safe as compared with those of former times, so that no serious harm need now be apprehended from the extirpation of most tumors. Morbid excrescences of all kinds, being worse than useless to the human economy, should be treated like foreign invaders and removed before they become too mischievous.

4. Some of the advantages of the early extirpation of tumors have incidentally appeared in the discussion of the

first three points, but their reiteration seems proper in the conclusion of the answer to the initial question.

There can be no reasonable doubt of the advantage of excising a small tumor believed to be malignant, even if this be owing only to the ease with which the operation can be executed, or to the slight degree of violence inflicted upon the parts as contrasted with the magnitude of the procedure needed for the ablation of a growth which has attained great dimensions or which has infected the adjacent lymph glands.

For a long time past there has been a prevailing belief that extirpation of a quiescent malignant tumor only serves to stimulate the extension of the disease. But this belief does not appear to have been founded upon trustworthy clinical observations or pathological data. It is undoubtedly true that any incomplete cutting operation upon a malignant tumor, or its partial cauterization with silver nitrate or arsenic, only serves to stimulate its extension, but complete extirpation, including the adjacent connective tissue, fascia, and lymphatics, does not leave behind any disease to be extended. Recurrence of the disease in this case would take place after cicatrization of the wound and would be by new cell-proliferation and not by extension. External cancerous tumors have been excised, and in the course of a few weeks the patients have died of internal cancer; but in these cases, if the internal had not antedated the external disease, the metastatic process had surely begun before the operation and would scarcely have occurred had the tumor been excised five or six months before.

The main question, however, relates more particularly to the early excision of benign tumors, of those of doubtful character, and of the potentially malignant tumors during the earliest period of their stage of benignity. It is in respect to the propriety of early excision of these several tu-

mors that surgeons still differ in opinion. Since it appears, from analysis of the observations of surgeons of long and vast experience, that a large proportion of benign tumors in time become malignant, and that most malignant tumors have a stage of benignity, there should be no hesitation in advising the extirpation of these tumors as soon as discovered, and this advice may be regarded as the very essence of conservatism and of prophylaxis.

From a purely æsthetic point of view it is of no little consequence to minimize scars resulting from the excision of tumors of the face, neck, arms, or hands, particularly those occurring in the gentler sex, and this can be best accomplished by the timely removal of such morbid growths as are likely to increase to the extent of greatly disfiguring the patients. It should, however, be noted that almost any scar is better than an ugly tumor.

During the spring of 1892 the writer excised a superficial, circumscribed, ovoid, and lobulated mammary adenoma of two years' standing and only an inch and a half in mean diameter, from the upper and inner part of the left breast of a young lady of twenty-one. The wound, two inches in length, healed primarily. The scar is so situated as not to be visible when a low-necked dress is worn. The operation was performed thus early with the view of minimizing the scar and with due regard to prophylaxis. For many years past the writer, like others, has adopted the practice of excising such tumors as soon as discovered, and he has no doubt that thus many growths have been nipped in the bud which in time would probably have become malignant.

The naevi that appear upon the faces of infants, though benign, often grow so rapidly as to constitute serious disfigurement, and to require operations which leave extensive scars. If before these little vascular tumors cover a space of more than two or three millimetres they are promptly

destroyed with the thermo-cautery, the ensuing scar is likely to be almost imperceptible. The operation is completed in a few seconds and the pain is very slight.

The greatest mischief arises from temporization in the case of small epithelial growths upon the lips. The adviser, perhaps uncertain as to the nature of the growth, waits until he can be sure of the diagnosis, suggests local remedies or sometimes even cauterization with nitrate of silver which causes the most rapid extension of the disease. There is then no doubt as to the character of the growth, for the ambient lymphatics are already involved. The tumor is excised, but too late, and the disease soon recurs. Any tumor of the lip of doubtful character should unhesitatingly be removed. As a general rule, the subsequent dissection and microscopical examination of the tumor shows the operation to have been justifiable. Early excision is the surest means of obtaining a long period of immunity from recurrence. In the experience of the writer, excision of labial epitheliomata has given immunity from recurrence varying from five to sixteen years. In some of the cases the operation was not performed as early as it would now be done, but they were all apparently free from lymphatic involvement. In a case of nasal epithelioma the exact period of immunity could not be determined. The patient was last seen nine years after the operation and was then well.

The period of immunity from recurrence of the disease after operation is very variable even in the same species of tumor, and is doubtless influenced by the time of the operation; the earlier the operation the greater the chances of prolonged immunity. In carcinoma the average period of immunity is stated by some observers to be three years and a half, and by others seven years. The extremes are three months and forty years. The writer has reported cases in which the periods of immunity varied from seven to forty

years. A little reflection upon these facts naturally leads to a cautious prognosis in a large proportion of cases. As soon as a tumor recurs, when it is still small, painless, and apparently harmless, it should be extirpated. The moral effect of this timely operation is generally good, bodily comfort is thereby promoted, and life is prolonged. It is therefore wise to operate as often as the tumor recurs. Dr. Valentine Mott reported a case of recurring "malignant sarcoma" of the side that had been extirpated fifteen times in twenty-three years. For the first twenty years eight operations were performed upon the man, and the intervals of freedom from the disease averaged three years. During the remaining three years of his life seven operations were performed, and the intervals averaged four months. Dr. S. W. Gross recorded a case of recurring sarcoma excised by his father twenty-three times in four years. The woman was alive and in good health ten years and nine months after the last operation. Mr. Bryant cites a case of lipoma over the left hip, "atrophic carcinoma" of the left breast, and sarcoma of the right breast in a woman sixty-four years of age. He removed the right breast, and in about six months there was a recurrence of sarcoma in the scar. In the course of four years and a half from the first operation the disease had recurred in all sixteen times, and sixteen operations were performed for its cure. At last accounts the patient's general condition was good. The carcinoma of the left breast and the lipoma of the hip were not excised. The annals of surgery of all countries contain reports of cases of undoubted malignant tumors, after whose excision the periods of immunity from recurrence have varied from ten to thirty-five years.

Malignant tumors of long bones or of their periosteum, such as sarcomata, demand the most prompt and radical operations. Nothing less than the amputation of a limb

offers the slightest chance for any prolongation of the period of immunity from recurrence of the disease. Circumscribed tumors, however, in the soft parts of a limb may sometimes be enucleated without impairing the usefulness of the limb; and, if the operation be performed at the earliest period of the manifestation of the disease, there may be no recurrence for a long time, or there may be a permanent cure, as in the case of a benign fibrous tumor.

According to the observations of many experienced surgeons, the average duration of life is a little less than three years from the first appearance of the tumor in cases of breast carcinomata that have not been subjected to any treatment. Does this not indicate the wisdom of prompt action in the great majority of cases, since the shortest average duration of life after operations which were not performed during the stage of benignity of the tumors is three years and a half, and since it has been shown that early operations afford the best chance for many years of immunity from recurrence?

Very large tumors are now rarely seen in comparison with the great numbers recorded before the introduction of ether, nitrous oxide, and chloroform as anæsthetic agents. The dread of surgical operations was formerly so great that patients were ready for the use of any means proposed rather than the knife, although many of the modes of treatment employed were cruel in the extreme, far exceeding any torture that could have been inflicted with cutting instruments. At length, when every method of cure failed and the tumor had attained great dimensions or was in a state of ulceration, the knife was used as the last resource, sometimes successfully, but generally without avail. The excision of breast tumors of fifteen and twenty pounds weight, and of fatty tumors of twenty and thirty pounds, was not an uncommon operation. Fibrous tumors weigh-

ing one hundred pounds and more were then often excised. Thanks to the several modern modes of inducing anæsthesia, the patients of to-day need have little fear of the knife, for they are assured that they will be rendered insensible to pain during and for a time after operation. The surgeon, conscious that he is inflicting no pain, is then able to give his whole attention to the work in hand, and performs the operation in accordance with the recent improvements in surgical procedures and with the best modes of insuring asepticism of the wound.

The categorical answer to the initial question is that at the earliest period of the development of any accessible tumor its complete extirpation is not only justifiable, but should be regarded as an eminently conservative and equally humane act.

The results of the examination of the four points proposed for consideration in the discussion of the initial question may be summarized as follows :

1. Malignant tumors exceed benign tumors in frequency.
2. The malignant tumors comprise epitheliomata, sarcomata, and internal adenomata.
3. Among the benign tumors myxomata and external adenomata often recur after excision, but do not infect the system.
4. There is no solid benign tumor that may not become malignant.
5. No means are known by which can be ascertained the precise time of the beginning of metamorphic action in tumors.
6. Most malignant tumors have a stage of benignity.
7. Excision of potentially malignant tumors in the early epoch of their stage of benignity is likely to effect a permanent cure, or at least to prolong greatly the period of immunity from recurrence of the disease.

8. In the excision of malignant tumors the greatest care should be taken to remove as much of the ambient tissues, including fasciæ and lymph glands, as compatible with good judgment.

9. General treatment of tumors has no value except as an adjuvant of a surgical operation, and is often indirectly injurious, leading the patient to expect a cure by persevering in the use of drugs, and thus allowing the disease to make rapid progress toward a fatal end.

10. Local treatment of tumors, by means of escharotic plasters, pastes, or powders, is the most fruitful in evil of all the devices for the torture of the afflicted. The plaster, paste, or powder causes the greater part of the tumor to slough, but there is enough left behind for the most rapid extension of the disease. The effect of the escharotic is, therefore, only to till a soil where new growths sprout like so many seeds cast upon rich loam.

11. Compression is delusive in the case of tumors containing cysts, and is directly hurtful by exciting the rapid growth of most tumors.

12. Expectancy, even in the case of benign tumors, is as unwise as meddling medication.

13. There should be no waste of time in endeavoring to make a precise diagnosis of a particular morbid growth, for after its excision the microscope reveals the nature of its constituent elements and assists in the establishment of the prognosis, which is the question of greatest importance to the sufferer.

14. What is known of the great fatality of tumors of long standing should induce surgeons to advise the complete removal of all accessible morbid growths as soon as detected, no matter how seemingly trivial or harmless, such as small glandular, fatty, fibrous, and vascular tumors, wens, warts, moles, etc.

15. As soon after excision and as often as a tumor recurs it should be removed, so long as there is any possibility of insuring cicatrization of the wound, even by skin-grafting.

16. Medicinal treatment after the excision of malignant tumors is of much value, even if it consists only in the administration of reconstituent medicines.

